

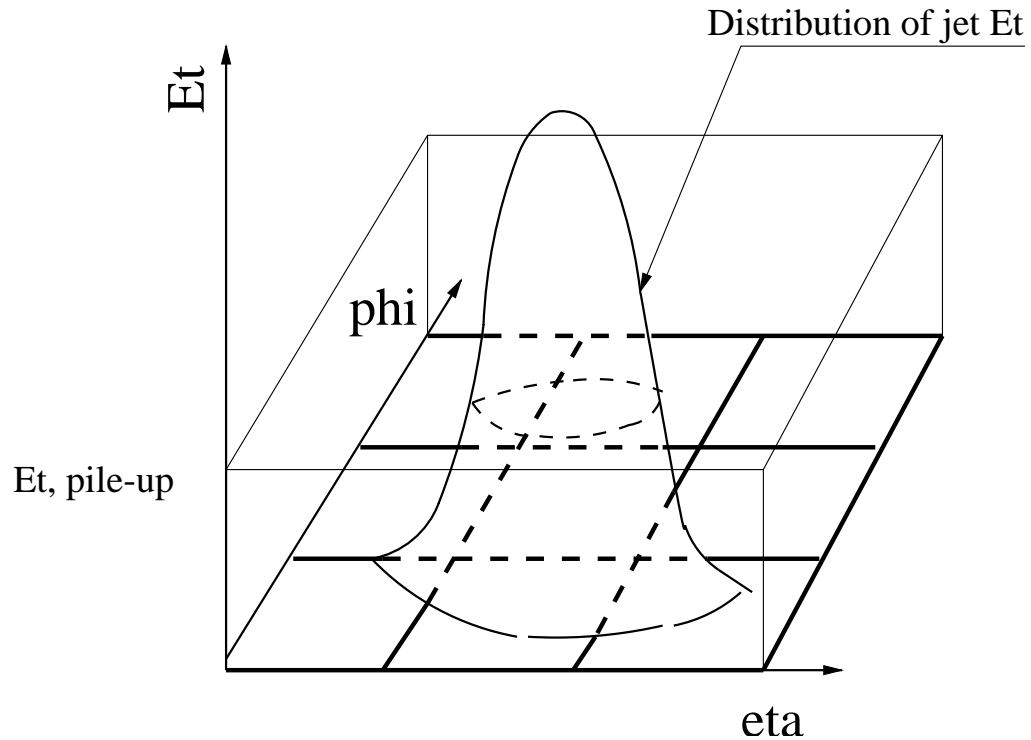
# **Optimization of Jet Trigger**

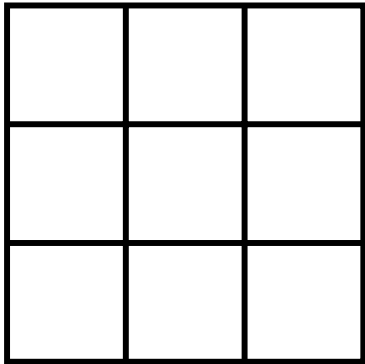
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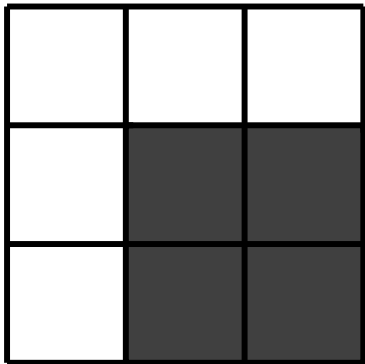
- hlt events: hlt1520, hlt2030, hlt3050, min-bias
- *Ntuple – Maker* was used for jet reconstruction and to retrieve information about  $E_t$  of calorimeter cells
- Three models of trigger were tested:
  1. Window  $12 \times 12$  towers sliding  $4 \times 4$  towers
  2. The same as the first one but then inside this window we calculate  $E_t$  for each of the four corners ( $8 \times 8$  towers)
  3. Window  $6 \times 6$  towers sliding  $2 \times 2$  towers
- Important notice: During calculations was not applied cut on  $E_t$  of individual towers

- For high  $P_t$  jets situation is clear - than greater size of trigger tower that greater efficiency of jet's reconstruction. In this case the contribution of pile-up  $E_t$  in the trigger tower is significantly lower than contribution of jet  $E_t$ .
- For the case of low  $E_t$  the contribution from  $E_t$  of jet on the bounds of trigger tower is significantly lower than contribution of pile-up's  $E_t$ . So that to have appropriate trigger's rate we need to take greater threshold. Situation is something like this:

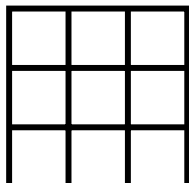




$$12 \times 12$$



$$8 \times 8$$



$$6 \times 6$$

